

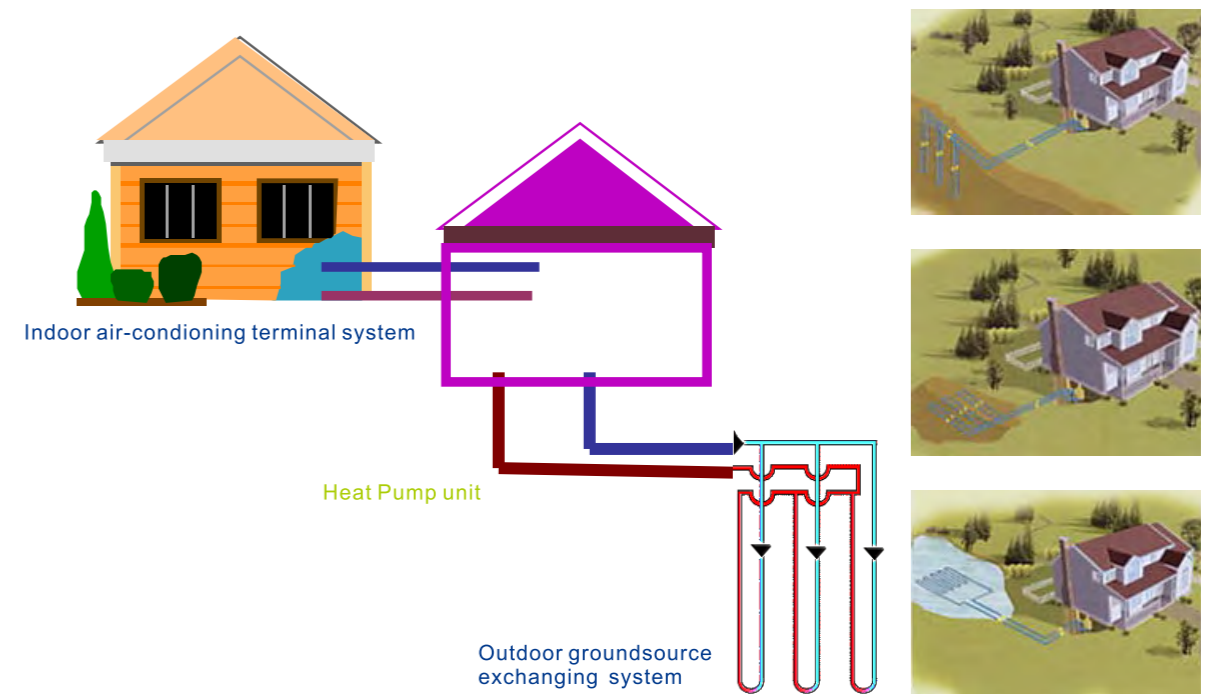
Environmental-friendly advocated
Realizing Energy-saving



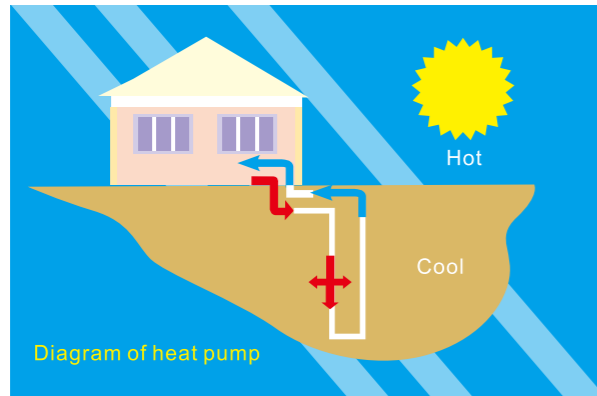
System Introduction

System introduction

Ground source heat pumps extract heat from the ground by circulating fluid through buried pipes in horizontal trenches or vertical boreholes. They concentrate heat by using a vapour compression cycle, and they transfer heat into buildings to provide heating and hot water without burning fossil fuels. The system can run dependently, and high efficient, and are environment- friendly.

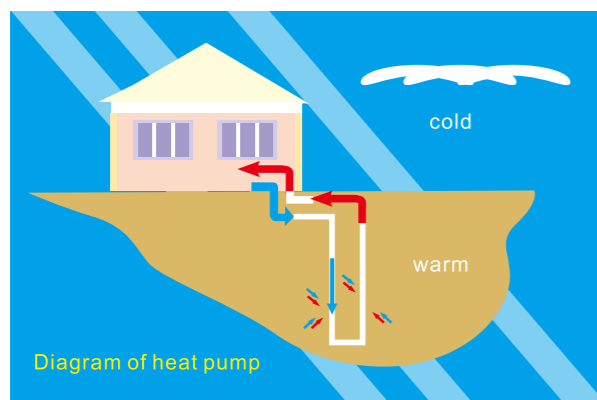


Systematic principle



Heating Principle

In heating principle, ground source heat pump compressor acting on cold items, and the refrigerant flows through the four-way valve reversing direction. By water circulating underground groundwater or soil to absorb heat through internal cooling / air heat exchanger the refrigerant condensed by the air circulation will be carried by the refrigerant heat absorption. The heat transfer to the indoor underground continuous process, with forced convection, natural convection or radiation form to indoor heating.



Refrigeration principle:

under the refrigeration state, the ground-source heat pump compressor works on the coolants, keeping the circulation of the transfer of gas-liquid. Though the circulation, the heat energy are sobbed by the coolants, during the circulation, the rooms are continuous provided the cold wind (about 13 degree)



System characteristic

©High efficiency and energy saving

The degree of resource in the surface of the earth are relatively stable, which ensure that the ground source heat pump system are of high efficiency which is 40% more than traditional air condition system, so the system can save 40% energy.

©Environmental friendly

The ground source heat pump the air condition system which uses the ground source to transfer the energy, which is not limited by region resource. It's a clean renewable energy.

There are no pollution, no burning, no smog and waste letting out when running the system.

©Safe and reliable

The system are composed by HDPE pipe, which can work for 50 years under 1.6Mpa. Fusion and electro fusion connection which are safe and reliable.

©Economical

The cost of the system are 30% cheaper than the traditional system, but both of the operating cost and maintenance charge are low.

Because of the temperature stability of ground, the system can works more reliable and stable, which ensure the lower maintenance cost than refrigerator and boiler system. So the system are of high efficiency and economy and also they work long time.

©Multi-function

The ground source heat pump system can supply heating, cool, hot water which is multi-functional. The system can replace the boiler, air condition heating machine.

Application



Application: Hot water supply for residential application, heating and cooling for constructions such as hotel, shopping mall, office building, school, commercial construction, villa. etc.



Distributed system



Hybrid system

GROUND-SOURCE
HEAT PUMP SYSTEM

Design

Application of Heat pump system

The ground source heat pump are separated into concentrated system and distributed system and hybrid system by the way to transfer cold and heat energy.

The ground source heat pump system are used with cooling tower, heating boilers, solar energy system.

Purpose

- ◎To keep the thermal balance of the grounds
- ◎To solve the limited buried pipe problem.
- ◎To reduce the invest cost.
- ◎To use the resource rationally

Methods

◎ In South Area: large cooling load, low thermal load, so in summer, it's better to use the ground source heat pump and cooling tower; in winter, only use ground source heat pump.

◎ In north area: large thermal load, low cooling load. So in winter it's better to use ground source heat pump with boiler or solar energy system, in summer only use ground source.